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ABSTRACT

Perspectives concerning data collection in postsecondary education management and planning are considered. It is suggested that one of the dangers in data collection operations is collecting data without knowing why. It is argued that unless one knows in advance what is being measured and the purposes of measurement, data should not be collected. Principles that are followed in New York include the following: before data are collected, an attempt is made to determine whether or not that data are going to help make a decision or influence a decision; an attempt is made to feed back information on how the data were used to the institutions that furnish the data; and data collection costs to the institution are estimated. Data are collected in New York in relationship to four different kinds of activities: measuring progress toward goals, for purposes of accountability, for decision-making, and for planning. Much of the state's data collection activities are designed to measure, by institution and by sector, progress toward four goals for postsecondary education: open access, maintenance of a comprehensive system including all types of institutions to match all types of student needs; provision of special educational opportunities for persons from groups excluded previously from higher education; and commitment to excellence and quality. Specific ways in which data collection supports these goals are discussed. New York's long-range goal is to implement the National Center for Higher Education Management System (NCHEMS) planning model online, which involves getting most of the institutions into the NCHEMS format and minimizing data requirements to the kinds of questions that will likely be needed on a regular basis. (SW)

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INFORMATION RELATED PROBLEMS IN STATE PLANNING

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Philadelphia, Pennsylvania
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INFORMATION RELATED PROBLEMS IN STATE PLANNING

I remember the first day on the job at the New York State Education Department. I asked about our management information systems and was told that we had just finished a compilation of our higher education facilities inventory. A staff member came into my office, all excited, and brought these reams and reams of computer runs and laid them on my desk. He said, "Do you know we have 103 million net assignable square feet of space in New York State?"

I said, "Really? That's great! How do I use that information?" He replied, "Well, we can tell you about space on campuses, by college, by utilization rates, by kind of classroom, and by type of laboratory." I replied, "That's very good. How do we use the information? Why did we collect it?"

He said, "Well, we're required to collect the information under the Higher Educational Facilities Act." I asked, "How much did the project cost the taxpayers?"

He said, "We spent a million dollars collecting the file for New York."

To this day, I know of no significant use to which that material has been put. Yes, we've got detailed information on facilities by institution. We've got utilization rates by institution; we know the age distribution of all of our facilities. Yet, the New York State Dormitory Authority which bonds new construction has never asked for it. The State University which spends enormous amounts for new construction has never asked for it. The City University which has a $2 billion construction program has never asked for it. I have never asked for it. Our private institutions have never asked for it, and I must say that I do not believe the data may have ever been used for any kind of policy decision in the state.

I don't know if you have similar situations in your state, but here's a good example of somebody deciding, "Wouldn't it be nice if we had these kinds of data available?" And when you press people with respect to how it would be used, it's pretty hard to pin them down. Yes, we do make all kinds of interesting comparisons and when an institution

seeks authority for new construction we review their present facilities. But decisions on new construction are made on the basis of a different set of data.

Let me discuss a second case. At about the same time, I was taken to a large room and in that room were row upon row of file cabinets. Each cabinet was filled with something called HEGIS forms by institution. In addition to the "HEGIS" forms they had what we call "HEDS" forms; our complementary Higher Education Data System. They've got their HEGIS forms and we're not going to let the federal government have HEGIS forms without having our own more precise HEDS forms. We give money to private institutions and they have to be made accountable; so they must file additional forms with us. We receive audited financial statements from each of the private colleges in the state. And I must confess I have not found anyone on our staff who ever utilized any of the data in that room. They didn't know what to do because the data were collected in anticipation of all kinds of data needs, yet none of the anticipated needs ever arose.

I've seen the data problem from another point of view. When I was in charge of the budget at City University, a budget officer not directly responsible for our budget claimed that we did not have enough data supporting our budget request. He said, "you have a $500 million budget request with a 30-page document, which simply is not sufficient to justify a $500 million budget!" I asked him what he wanted. He wanted supporting information. The budget finally approved at City University is on a line-item basis. City University is the third largest university in the world, employs a 10,000 member faculty. I called a staff member and ordered, "Get this fellow our line-item budget for last year and give him all our budget worksheets for this year." Staff wheeled in a large cart with seven or eight cartons and we loaded them in the budget officer's car and he went back to Albany. We never saw him again. Our budget that year, as in every other year, was negotiated between the mayor and the governor in relation to the smaller 30-page document.

The point I'm making is, obviously, that one of the dangers we in the data-collecting business face is the danger of collecting data without knowing "why." If I have a single idea to convey, it is this--in a complex system, unless you know in advance what it is you are measuring and for what purposes, you really ought not to collect the data. We try to follow several principles in New York in order to minimize data collection. Let me share them with you.

First, before we collect any data, we test whether or not that data is going to help make a decision or influence a decision. If, for example, someone proposes to collect data about minority group enrollments in New York institutions, we'll assume a variety of outcomes and try to determine how they will influence the decision. If the data collected will not influence the outcome, we do not collect the data. It is not enough to request data; the person making the request must justify the need. We regard data collection from institutions as a terrribly costly process for us and a terribly costly process for them.

Principle two, we feed back or try to feed back all data to the institutions which furnish them. That is, if we collect data from institutions, we want them to know how we use it and we want them to have it available for their use. And you'd be surprised how that limits the kind of data you collect because you've got to do something with the data when you get it. You can't just leave it in the file somewhere. You've to to organize it, collate it, and at least share it with those who participated in the collection of it.

The third principle is to take into account the impact on the institution by estimating data collection costs. Just to give you an example of what that element could involve, in the collection of data on enrollments (which I hope we're going to change), we collect 800,000 separate data elements. We collect the data by institution, by sex, by major discipline and by levels, and by status of student (part-time or full-time). Eight hundred thousand data elements! Six months after we collected the data, along came the U. S. Office of Civil Rights and requested similar data. Their request was for 260 separate disciplines, by ten different racial groups, (including some who didn't even live in New York). That would have meant expanding our data requirements from 800,000 data elements to ten million. It meant starting all over again. We asked the OCR how they would use this data. When we were convinced they had no idea, we refused to comply. They wrote to the colleges directly. I don't think they got very much response. I asked them, "What are you going to do with that information? Why do you want to know how many black women are majoring in mathematics at St. Lawrence University in 1974?" I got back rather vague answers, but nobody in the Office of Civil Rights could tell me what policy decision would be considered. What they had in mind, I suspect, was a fishing expedition for enforcement of an affirmative action program. But there are better ways of enforcing affirmative action programs than asking every institution in the state to do a survey of every student for every conceivable characteristic and somehow classify all the material and feed it all into Washington. I just couldn't believe that anyone in

Washington who demanded that kind of data in that detail could do anything very useful with it. We surely could not.

We collect data in relationship to four different kinds of activities. Let me just define those and then discuss them in some detail. First, we try to measure progress toward goals. That's our most important data collection activity. I'll spend a little time on how we go about doing that. Second, we collect data for purposes of accountability, that is the accountability for funds received from the state. Third, we collect data for decision making. And fourth, we collect data for purposes of planning.

The four box headings across the top (reference to visual aid) are the four Regents goals for postsecondary education in the state defined in our statewide plan. See Appendix A. It's Regents policy to provide open access, which means every high school graduate, regardless of economic circumstances, has the right to postsecondary education. The second goal is to maintain a comprehensive system, including all types of institutions to match all types of student needs. Third, we provide special educational opportunities for persons from groups excluded previously from higher education. Our fourth goal is a commitment to excellence and quality. Each of those broad goals is implemented through a series of programs; much of our data collection on a continuous basis is to measure, by institution and by sector, our progress toward these goals.

Let me just take the example of open access. The programs for open access are (1) subsidized tuition at the City University (where it's free), (2) low tuition and guaranteed access at the State University community colleges, (3) a very generous Tuition Assistance Program for students at private as well as public colleges, (4) open admission policies throughout the state, and (5) guaranteed transfer places at public and some private institutions for all two-year college graduates. An important principle in our state is that we define our goals in ways that permit us to measure progress toward them; otherwise, the goal is meaningless. Now with respect to open access, we collect detailed information on the "college-going" rate right down to every high school in the state. That is, we determine what percent of every high school graduating class is going on to college. We can, if we want, determine which college they're going on to. We aggregate the data on a county level. In other words, we determine by county and by region where high school graduates go. If they go on to postsecondary institutions, the information also helps us project our enrollments over the next decade. We also look at the ratio of students attending college from upper-income families in relation to lower income families. These data provide a measure of

access by income distribution. We believe a ratio of 1.5 to 1 [of students from families with income above the median to families with income below the median] is a favorable measure of opportunity for low income families to send students to college. The data are collected every two years and published every two years. Everyone in the state can take a look at how well we're doing in relationship to whatever other standard they want to use.

Comprehensiveness of the system is our second goal. We maintain a record (I'm sure most states do the same) of the enrollment distribution of students in the state by institution. We also watch the trend over a five-year period. We know what proportion of the students are in the private sector, by institution, and what proportion attend institutions in the public sector and which public institutions. We also maintain a detailed institutional profile on every institution in the state; the profile contains about fifty data elements over a five-year period for that institution: enrollment trends; debt service per student; endowment per student; level of deficit (very few have levels of surplus anymore) and how those measures change from year to year. And each year we prepare a list of those institutions which we believe are in serious financial difficulty. That list is circulated to three of our offices which deal with those institutions. The institutions are monitored by the Department. We maintain projected enrollments for every institution in the state; that is, we have an enrollment model in New York for the 1990s that provides detailed data by institution. If the budget office wants to know what's the outlook for South County Community College in 1995, we can tell them what we think its enrollment will be under different assumptions. Usually the budget office seeks the answer under the most pessimistic assumption we have because they're interested in restricting its growth. But we also get inquiries from institutions seeking to increase their capacity. We update the projections on an annual basis, so that we can take into account changes in college-going rate by county, by region, and changes in institutional attractiveness by sector and by institution any time we see a shift in trends. Special educational opportunities are made available to special populations who require special servies. We measure participation of women and minorities now on a regular basis, both in the student body and among the faculty of all colleges and universities in the state. When we first approached the colleges in 1974 for this information, they balked. They said we had no business collecting it. The information was sensitive. We were asked what we were going to do with the information. We told them we're going to measure whether we're providing the same kinds of opportunities for black and Puerto Rican students as we provide for white students and here's how we're going to

measure it, and here's how we're going to report it, not by institution but by sector, and such information will be made available to you. We're going to do the same thing for women and we're going to do the same thing with information on faculty. When we told them how we were going to use the information and actually gave them the display tables that we were going to use in our progress report, we had no difficulty collecting the data. Every institution cooperated.

This was the first time we ever got letters from institutions thanking us for being so explicit with respect to what we were going to use the data for. In our '74 Progress Report, we were able to report that our minority enrollments in New York State, (freshmen class, fall '74) exceeded the proportion of minority students in the college age group. And these data helped an awful lot in maintaining support for our special opportunity programs, where we invest about 50 or 60 million dollars every year. The legislature and the black caucus, which was particularly concerned about the effectiveness of the program, were very much satisfied with that kind of demonstration of the effectiveness of the large outlay of dollars. With respect to women, we can tell you the percentage of women in every class in the state at every institution. That's an important issue at the moment. We know men constitute 52% of our freshmen class--down from 56%, and we're making progress toward a goal of 50-50 ratio of men to women in the freshmen class.

The measurement of excellence and quality is another most difficult area. We have in process three important evaluations: doctoral programs by discipline on a statewide basis; master's programs; and we're also working to reform our teacher training programs. Here again, it is very hard to measure progress. We carefully measure and monitor for other reasons the instate college-going rate, that is the proportion of New York high school graduates going to New York colleges. And during the past five years that rate has been stable despite an overall increase in the college-going rate. Our college-going rate has gone down 1% a year of the high school graduating class and all of that decline has been experience by colleges in other states because our instate college-going rate has stayed at around 51 to 52% for the last five years. We monitor that rate for purposes of enrollment projections, but we also monitor that rate to determine whether or not--and it's a very rough statistic--our colleges are continuing to attract students in relationship to colleges in other states. We are concerned about the survival of our institutions because higher education in New York is an important contribution to our economy. I think it probably ranks fourth or fifth in the state in terms of total expenditures. We regard it

in that sense as well as from an educational point of view. Research grant levels indicate how our graduate institutions are doing in the competition for federal funds and for private grant funds.

And these measures are the ways of our trying to look at the "state of the state" of postsecondary education in New York and in relationship to Regents goals. Now if the Regents should identify a new goal or a new program, we would immediately try to identify those measures which would tell us whether or not that goal is being achieved or if progress is being made toward that goal. Again, if we specify a goal where we can't measure what we're doing, that goal is pure rhetoric and serves no operational purpose in terms of what we do within our department. The second set has to do with the very sensitive issue of aid to private higher education. As you know, we have what we call the Bundy program. We allocate $60 million per year as general aid through the Bundy program to private institutions. So we need to hold them accountable and that's a real problem. How do you hold an institution accountable for money received without intervening in their internal operation? I believe that the State University and City University are harassed to death by bureaucrats. You know, for the money they get--it is a lot--their whole internal operating structure is rendered less efficient by government intervention: the annual budgeting cycle, the preaudit of vouchers, the competitive bidding system, all of these arrangements that result in diseconomies are built into government's relationship to public higher education. We don't want to do that to our private institutions. The least interferring way which we could develop, with respect to holding private institutions accountable, is through the filing of audit reports. Of course all private institutions provide HEGIS data, but in addition, we receive audited financial statements from every private institution. I have to admit that they are rarely used; what does one do with an audited financial statement? You know what the fund balances are and you read the auditor's opinion which often states: "In our opinion, if this institution is able to maintain enrollments next year, its financial statements fairly state its financial position."

We are now looking at, and there's a lot of resistance in this state, the use of the Information Exchange Project that NCHEMS has developed as a way of providing a form of public disclosure on cost differences among institutions. The larger and wealthier institutions in the state are arguing that the reporting of cost differences is inappropriate because the public cannot understand and evaluate cost differences, and they would get very upset if they find that at Cornell College $7,000 is spent per FTE at the

undergraduate level compared to only $1,500 at Elmira College. How do you explain to the public that Cornell may be worth five times more than Elmira? It is easy to explain to the students, interestingly enough; it's harder to explain to the public. So, a lot of institutions in the state are objecting to the use of NCHEMS data for that purpose. We are going to proceed, we believe, with getting every institution in the state on the NCHEMS system as quickly as we can. There are two good reasons to do so. The quality of data we receive statewide depends upon consistency, and the quality of the data systems at the institutional level. Second, we think institutions will use that data if they have it available and if we help them find uses for it.

Accountability is a continuing problem and I don't minimize it. How do you hold private institutions accountable; what kinds of reporting systems are sensible; what kind of data do you look at; and for what purposes? I think these questions also should be raised with respect to public institutions. I must say I have more data available to us and the department with respect to private institutions than we do for public institutions. Public institutions primarily feel they are accountable since their budgets are made available to the public and they go through a pre-audit and post-audit of their expenditures. Private institutions believe they're accountable if they make disclosures with respect to their academic programs. Interestingly enough, the private sector is much more responsible than the public sector with respect to academic accountability.

We don't collect all data because we may use it at some time in the future. If we need to answer a particular question, we do a special study. Let me give you three examples: the Bachelor of Technology degree was in fashion about three or four years ago. Three programs were established in New York and we found a year or two afterward they had a heck of a time recruiting students. This was at a time when enrollments were still growing so we began to ask, "Why?" It turns out that nobody really understood what that degree meant. So we undertook a study of industry needs and among students and among the faculties of the engineering-technology schools. We concluded that the degree really was not a meaningful one and ought not to be continued for a lot of reasons, which are unimportant. What is important is we concentrated our research resources on that particular question and collected whatever data we needed.

Peter Keitel, who is among you, undertook a study two years ago of how students finance their college-going costs. For $15,000 we surveyed enough students to be able to generalize about the total student population of New York State--with respect to how they financed the cost of their

education. Instead of maintaining an elaborate data collection system, we simply surveyed a sample of students; we were very careful to get valid results, and we are now doing the same thing for graduate students. The one-million-dollar Higher Education Facility Survey was undertaken because somebody might ask some questions about facilities. We couldn't have done the same thing with respect to student financing of college-going costs. But once we had identified the precise question, it was not costly to obtain the data needed for an answer. It is costly to collect data in anticipation that the question may someday come up; and when it does, you'll find the data probably doesn't answer the question anyway because some key element is missing. So in decision making, we almost always undertake special studies.

Let me turn last to data for planning needs. Here's where our data base is most primitive and the data area where we probably should develop much more systematic approaches. Let me tell you what we would like to have available, and our goal is to have it available in a year or two. We are working with NCHEMS to implement their statewide planning model. The model is not sophisticated enough for us the way it's constructed and we plan to adapt it to our needs. Let me tell you what it is what we'd like to do. We'd like to be able to project enrollments by income level of students for every institution in the state and to be able to measure the impact of changes in state policy on the enrollment distribution among institutions. We also want to be able to identify what resource changes would result from shifts of students among the sectors and by program. What that means to us is that for every institution, public or private, we must have within that model the income distribution of its student body, including students enrolled in special opportunity programs. Also, we need to measure the impact of a change in tuition levels on the distribution of students at all institutions. For example, the question we'd like to ask today, "If we could, instead of funding the SEEK program (which is a City University special opportunity program, at a cost of about $4,000 per student), fund 2,000 students in the HEOP program (a comparable program in the private sector which is state funded), what will be the impact on retention rates? What will be the impact on state costs?" And the state costs involve not just HEOP program costs, but the impact on student aid and the impact on construction costs in the public sector and the private sector. You could get into crude cost-benefit analysis--whether the savings in the state results from a shift of 2,000 students between the public and private sector taking into account the increase in the retention level in the private sector, less all the stickiness in costs that you can't reduce in the public sector. It is worth it from a cost-benefit point of view. We

probably wouldn't do it anyway because of political reasons, but we would at least raise the question as to whether it would make sense even to pursue. Or consider another kind of question we're trying to deal with at this time. Suppose we raise scholarship assistance from a $1,500 ceiling to a $1,700 ceiling next fall. What will be the net impact on state taxes and what will be the net shift of students among institutions in the state? Those questions are interesting questions and the answers are interesting on an aggregate basis. They are useless to us on an aggregate basis because we want to know what the impact would be on each institution in the state; or at least major groups of institutions. Will NYU be better off or worse off? Will the community colleges as a group be better off or worse off? Will the impact be in New York City or upstate? These are terribly important questions because we are not dealing with an aggregate called the higher education system; we are dealing with 225 institutions, each of which responds differently, is in a different Assembly district, and has its own particular and peculiar problems.

So we're going to take the NCHEMS Statewide Planning Model and charge it with sufficient data so that it will be our model. Everyone of our institutions will be able to answer the kinds of questions, the "as if" questions that we want to ask for purposes of planning.

Now, in doing all of this, we do not maintain any data with respect to individual elements at institutions. We don't maintain a record of all students at all institutions; some states do, I understand. (We do maintain unit record data on facilities at all institutions and that's a horror. Everytime I think of it, I think what a total waste of money that is.) What we do is define the data elements we need and we help institutions develop a data bank necessary to maintain the data for when we need them. We help the institutions themselves develop sophistication with respect to their information systems so we can get access to that data in a timely way when we need it. Thus, our long-term goal, meaning three years, because that's long-term in New York, is to get the NCHEMS planning model on line, which involves, we think, getting most of our institutions into the NCHEMS format and minimizing our own data requirements as we have in the past to the kinds of questions that we think we need to answer on a regular basis.

The message again--collect as little as you can and know how you want to use it when you do collect it. And be sure that you share it with the institution which is doing the hard work of getting the data together to meet your needs.

Thank you very much.

EXHIBIT A

IMPLEMENTATION OF REGENTS GOAL FOR POSTSECONDARY EDUCATION

Goals	Open Access	Comprehensiveness of System	Special Educational Opportunity	Excellence & Quality
Objectives	Provide every high school graduate with postsecondary opportunity	1. Maintain Public, Private, Proprietary Institutions 2. Extend Educational System to Non-Education Institutions	Increase Participation of Women and Minorities	Maintain NYS as a Center for Higher Education
Programs	1. Subsidized Tuition City, State Univer. Comm. Colleges 2. Tuition Assistance Program 3. High School-College Articulation 4. Open Admissions 5. Guaranteed Transfers	1. Coordinated Planning 2. Degree Powers for Proprietary Institutions 3. Regents External Degree 4. Credit Bank 5. General Aid Private Colleges	1. Affirmative Action 2. Special Opportunity Programs 3. Inmate Education 4. Part-time Enrollment Shifts	1. Evaluation of Doctoral and Masters Programs 2. Program Regulations 3. State Fellowship Program 4. Bundy Aid
Measures	1. College-Going Rate 2. Income Distribution of Students 3. Ratio of Students From Upper Half of Income Families: Lower Half	1. Enrollment Distribution 2. Financial Health of Institutions 3. Projected Enrollments	1. Minority Enrollment Level 2. Faculty Staff Distribution	1. Instate College Going Rate 2. Research Grant Level 3. Accreditation and Registration Results
Data				